

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0001] with the following amended paragraph:

[0001] This application is based on Provisional Patent Application No. 60/434,212, filed December 17, 2002.

Please replace paragraph [0007] with the following amended paragraph:

[0007] Various image processing systems are available for recognizing, and eliminating by image processing, scanning artifacts corresponding to defects in the originals. One such solution proposes the use of two sets of color sensitive sensors (photosites), each set being sensitive to a different color of light and a backing having a predetermined color. The predetermined color of the backing is selected such that it appears nearly black to one set of sensors and appears nearly white to a different set of sensors. For example, the system might include a backing that is a saturated yellow with a set of sensors that is sensitive to blue being used for edge detection and a set of sensors that is sensitive to green being used for image capture. Such a solution can be used with color scanners wherein a single channel, such as blue may be used for edge detection and registration with all three sensors (red, green, blue) being used for image capture.

Please replace paragraph [0009] with the following amended paragraph:

[0009] In accordance with the teachings herein, there is disclosed a method for dynamic registration using chrominance information. Briefly, an embodiment of a

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detection algorithm will look for an appreciable difference in chrominance levels to perform edge detection. To calibrate, a small scan is performed to determine the color of the backing/ski in the document feeder. Based on the detected color and video statistics (e.g., chrominance mean and deviation) of the backing/ski, appropriate channel and suitable set of registration parameters are calculated for automatic registration of documents. The calculated registration parameters are then used to automatically register documents supported by the backing/ski.

Please replace paragraph [0015] with the following amended paragraph:

[0015] FIG. 3 illustrates an embodiment of a process for determining using registration parameters for electronic registration of documents supported by an associated given ski; and

Please replace paragraph [0016] with the following amended paragraph:

[0016] FIG. 4 shows an embodiment of a method for determining using registration parameters for detecting edges of documents supported by an associated a given-ski in accordance with one aspect of the present disclosure.

Please replace paragraph [0024] with the following amended paragraph:

[0024] Illumination source 12 generates light A which passes through platen glass 14 and is reflected off document 16 as reflected light B which is then received by sensor 18. Beneficially, sensor 18 comprises a raster input scanner (RIS) having

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a length, transverse to the page, sufficient to scan the entire width of the largest document supported by the handler. RIS 18 receives the reflected light B and converts the reflected light into video data identifying the particular gray level value (e.g., a value from 0 to 255 for an eight bit system), for each pixel across the scanline. The video data is supplied to image processing system (IPS) 20 which operates on the image data to identify registration parameters in a manner described below. For purposes of the present discussion it will be assumed that a gray level of 0 represents black and a gray level of 255 represents white. However, it should be appreciated that the teachings herein are applicable to other representations including, for example using more or less than 8 bits as well as using a system wherein a greater gray level value represents a darker (or "blacker") pixel and a lesser gray level value represents a lighter (or "whiter") pixel.

Please replace paragraph [0029] with the following amended paragraph:

[0029] Using the computed average gray level values μ_R , μ_G and μ_B , the process, at step 104 identifies the channel or channels having the highest average gray level contribution (high luminance values). At step 106, the process determines if all three channels have luminance values above a threshold. That is, step 106 determines if the ski looks "white" to each channel. If so, the process provides an error message indicating that the installed ski is not suitable for registering documents (step 108). Alternatively, if the scanning system is designed to performing edge detection operation using a white or whiter than white backing, step

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108 enables the system to perform such an operation by, for example, loading the appropriate parameters and processing routines into the image processing system.

Please replace paragraph [0039] with the following amended paragraph:

[0039] Once the channel to be used for registration is identified, the process determines the chrominance deviation (difference between maximum and minimum chrominance) of the ski ~~is determined~~ in that channel (step 210). The average chrominance gives only an idea of the color of the ski. On the other hand, the chrominance deviation helps in determining the variability of the ski, which helps in calculating the three registration parameters necessary for document detection.

Assuming the Cb channel is used for registration, step 210 generates the chrominance deviation ΔCb as difference between the maximum and minimum Cb value obtained in the scan of step 200.